IN THE CLAIMS:

Please amend Claims 1-3, 13-15, 17, 18 and 86-93 as follows. A marked-up copy of Claims 1-3, 13-15, 17, 18 and 86-93 showing the changes made thereto, is attached. Note that all the claims currently pending in this application, including those not presently amended, have been reproduced below for the Examiner's convenience.

B' cont.

1. (Twice Amended) A vibration member comprising:

an elastic member including a driving portion; and

an electro-mechanical energy conversion element in contact with said elastic member, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process, where application of an alternating signal to said electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and where a combination of the plurality of vibrations generates a driving vibration in said driving portion,

wherein a rigidity of portions of said elastic member located between said plurality of electrodes is set larger than a rigidity of other portions of said elastic member so as to offset differences in the modulus of elasticity profile generated by the polarization process of said electro-mechanical energy conversion element.

B1 cont.

2. (Twice Amended) A vibration member comprising:

an elastic member including a driving portion; and

an electro-mechanical energy conversion element in contact with said elastic member, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process, where application of an alternating signal to said electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and where a combination of the plurality of vibrations generates a driving vibration in said driving portion,

wherein a cross-sectional area of portions of said elastic member located between said plurality electrodes is set larger than a cross-sectional area of other portions of said elastic member so as to offset differences in the modulus of elasticity profile generated by the polarization process of said electro-mechanical energy conversion element.

3. (Twice Amended) A vibration member comprising:

an elastic member including a driving portion; and

an electro-mechanical energy conversion element in contact with said elastic member, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile

generated by the polarization process, where application of an alternating signal to said electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and where a combination of the plurality of vibrations generates a driving vibration in said driving portion,

wherein a density of portions of said elastic member located between said plurality of electrodes is set higher than a density of other portions of said elastic member so as to offset differences in the modulus of elasticity profile generated by the polarization process of said electro-mechanical energy conversion element.

13. (Twice Amended) A vibration member having an annular or disc shape, comprising:

an elastic member including a driving portion, and having an annular or disc shape; and

an electro-mechanical energy conversion element having an annular shape and bonded to one surface of said elastic member, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process, where application of an alternating signal to the electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and where a combination of the plurality of vibrations generates a driving vibration in said driving portion,

wherein a rigidity of portions of said elastic member located between said plurality of electrodes is set larger than a rigidity of other portions of said elastic member so as to offset differences in the modulus of elasticity generated by the polarization process of said electro-mechanical energy conversion element.

B' cont.

14. (Twice Amended) A vibration member having an annular or disc shape, comprising:

an elastic member including a driving portion, and having an annular or disc shape; and

an electro-mechanical energy conversion element having an annular shape and bonded to one surface of said elastic member, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process, where application of an alternating signal to said electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and where a combination of the plurality of vibrations generates a driving vibration in said driving portion,

wherein a cross-sectional area of portions of said elastic member located between said plurality of electrodes is set larger than a cross-sectional area of other portions of said elastic member so as to offset differences in the modulus of elasticity profile generated by the polarization process of said electro-mechanical energy conversion element.

B1 cont.

15. (Twice Amended) A vibration member having an annular or disc shape, comprising:

an elastic member including a driving portion, and having an annular or disc shape; and

an electro-mechanical energy conversion element having an annular shape and bonded to one surface of said elastic member, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process, where application of an alternating signal to the electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and where a combination of the plurality of vibrations generates a driving vibration in said driving portion,

wherein a density of portions of said elastic member located between said plurality of electrodes is set higher than a density of other portions of said elastic member so as to offset differences in the modulus of elasticity profile generated by the polarization process of said electro-mechanical energy conversion element.

17. (Twice Amended) A vibration member comprising:

an elastic member including plural elastic member portions and a driving portion; and

an electro-mechanical energy conversion element held and fixed between said plural elastic member portions, said electro-mechanical energy conversion element

having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process, where application of an alternating signal to said electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and where a combination of the plurality of vibrations generates a driving vibration in said driving portion of said elastic member,

wherein the rigidity of portions of said elastic member located between adjacent electrodes of said plurality of electrodes having different directions of polarization from each other is set larger than the rigidity of other portions of said elastic member so as to offset differences in the modulus of elasticity profile generated by the polarization process of said electro-mechanical energy conversion element.

18. (Twice Amended) A vibration member comprising:

an elastic member including plural elastic member portions and a driving portion; and

an electro-mechanical energy conversion element held and fixed between said plural elastic member portions, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process, where application of an alternating signal to said electro-mechanical energy conversion element generates a

plurality of vibrations in said elastic member, and where a combination of the plurality of vibrations generates a driving-vibration in said driving portion,

B1 cont.

wherein portions of said elastic member located between said plurality of electrodes are cut out so as to offset differences in the modulus of elasticity generated by the polarization process of said electro-mechanical energy conversion element.

57. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 1 and a contact member in press contact with said vibration member and movable relative to said vibration member by the driving force of said driving portion.

58. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 2 and a contact member in press contact with said vibration member and moveable relative to said vibration member by a driving force of said driving portion.

59. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 3 and a contact member in press contact with said vibration member and moveable relative to said vibration member by a driving force of said driving portion.

B' cont.

60. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 15 and a contact member in press contact with said vibration member and moveable relative to said vibration member by a driving force of said driving portion.

61. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 13 and a contact member in press contact with said vibration member and moveable relative to said vibration member by a driving force of said driving portion.

62. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 14 and a contact member in press contact with said vibration member and moveable relative to said vibration member by a driving force of said driving portion.

63. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 1 and a contact member in press contact with said vibration member through a fluid, said contact member being moveable relative to said vibration member by a driving force of said driving portion.

64. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 13 and a contact member in press contact with said

vibration member through a fluid, said contact member being moveable relative to said vibration member by a driving force of said driving portion.

B1 cont.

65. (Amended) A vibration wave driving apparatus including said vibration member according to Claim 14 and a contact member in press contact with said vibration member through a fluid, said contact member being moveable relative to said vibration member by a driving force of said driving portion.

67. (Unamended) A vibration member according to Claim 1, wherein adjacent electrodes have different directions of polarization.

68. (Unamended) A vibration member according to Claim 2, wherein adjacent electrodes have different directions of polarization.

69. (Unamended) A vibration member according to Claim 3, wherein adjacent electrodes have different directions of polarization.

70. (Unamended) A vibration member according to Claim 1, wherein the plurality of electrodes are formed by polishing and dividing said electro-mechanical energy conversion element.

B1 cont.

71. (Unamended) A vibration member according to Claim 2, wherein the plurality of electrodes are formed by polishing and dividing said electro-mechanical energy conversion element.

72. (Unamended) A vibration member according to Claim 3, wherein the plurality of electrodes are formed by polishing and dividing said electro-mechanical energy conversion element.

73. (Unamended) A vibration member according to Claim 1, wherein said electro-mechanical energy conversion element is formed by a plurality of elements.

74. (Unamended) A vibration member according to Claim 3, wherein said electro-mechanical energy conversion element is formed by a plurality of elements.

75. (Unamended) A vibration member according to Claim 2, wherein said elastic member has a plurality of grooves for enlarging displacement of said driving portion, and a groove for enlarging displacement located between said plurality of electrode is set shallower than other of the plurality grooves for enlarging displacement.

76. (Unamended) A vibration member according to Claim 3, wherein said elastic member is made of a material having pores, and a number of the pores in a

portion of said elastic member located between said plurality of electrodes is set less than that in other portions of said elastic member.

B/ cont.

77. (Unamended) A vibration member according to Claim 3, wherein said elastic member is made of a material having pores, and the pores in a portion of said elastic member located between said plurality of electrodes are impregnated with a material having melting point which is lower than that of the other material of said elastic member.

78. (Unamended) A vibration member according to Claim 13, wherein adjacent electrodes have different directions of polarization.

79. (Unamended) A vibration member according to Claim 14, wherein adjacent electrodes have different directions of polarization.

80. (Unamended) A vibration member according to Claim 15, wherein adjacent electrodes have different directions of polarization.

81. (Unamended) A vibration member according to Claim 13, wherein the plurality of electrodes are formed by polishing and dividing said electro-mechanical energy conversion element.

B' cont.

82. (Unamended) A vibration member according to Claim 14, wherein the plurality of electrodes are formed by polishing and dividing said electro-mechanical energy conversion element.

83. (Unamended) A vibration member according to Claim 15, wherein the plurality of electrodes are formed by polishing and dividing said electro-mechanical energy conversion element.

84. (Unamended) A vibration member according to Claim 13, wherein said electro-mechanical energy conversion element is formed by a plurality of elements.

85. (Unamended) A vibration member according to Claim 15, wherein said electro-mechanical energy conversion element is formed by a plurality of elements.

86. (Amended) A vibration member according to Claim 14, wherein said elastic member has a plurality of grooves for enlarging displacement of said driving portion, and a groove for enlarging displacement located between adjacent electrodes of said electrodes is set shallower than other grooves for enlarging displacement.

87. (Amended) A vibration member according to Claim 15, wherein said elastic member is made of a material having pores, and a number of pores in a portion

of said elastic member located between adjacent electrodes of said plurality of electrodes is set less than that in other portions of said elastic member.

B1 cont.

88. (Amended) A vibration member according to Claim 15, wherein said elastic member is made of a material having pores, and the pores in a portion of said elastic member located between adjacent electrodes of said plurality of electrodes are impregnated with a material having a melting point which is lower than that of other material of said elastic member.

89. (Amended) A vibration member according to Claim 13, wherein said electro-mechanical energy conversion element has a plurality of electrodes provided in a peripheral direction, and a width in a radial direction of a portion between adjacent electrodes of the plurality of electrodes is set larger than that of an electrode.

90. (Amended) A vibration member according to Claim 14, wherein said electro-mechanical energy conversion element has a plurality of electrodes provided in a peripheral direction, and a width in a radial direction of a portion between adjacent electrodes of the plurality of electrodes is set larger than that of an electrode.

91. (Amended) A vibration member comprising:

an elastic member including a driving portion, and having an annular or disc shape; and

B1 cont.

an electro-mechanical energy conversion element having an annular shape and bonded to one surface of said elastic member, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process, where application of an alternating signal to said electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and a combination of the plurality of vibrations generates a driving vibration in said driving portion,

wherein a rigidity of a portion of said elastic member adjacent to a portion located between adjacent electrodes of said plurality of electrodes is set larger than a rigidity of other portions of said elastic member so as to offset differences in the modulus of elasticity profile generated by the polarization treatment of said electro-mechanical energy conversion element.

92. (Amended) A vibration member comprising:

an elastic member including a driving portion, and having an annular or disc shape; and

an electro-mechanical energy conversion element having an annular shape and bonded to one surface of said elastic member, said electro-mechanical energy conversion element having a plurality of electrodes, a corresponding plurality of polarized regions formed by a polarization process of said electro-mechanical energy conversion element, and a modulus of elasticity profile generated by the polarization process profile,

B' cmd'd.

where application of an alternating signal to said electro-mechanical energy conversion element generates a plurality of vibrations in said elastic member, and a combination of the plurality of vibrations generates a driving vibration in said driving portion,

wherein a cross-sectional area of a portion of said elastic member adjacent to a portion located between adjacent electrodes of said plurality of electrodes is set larger than that of other portions of said elastic member so as to offset differences in the modulus of elasticity generated by the polarization process of said electro-mechanical energy conversion element.

93. (Amended) A vibration member according to Claim 92, wherein said elastic member has a plurality of grooves for enlarging displacement of said driving portion, and a groove for enlarging displacement located between adjacent electrodes of said plurality of electrodes is set shallower than other grooves for enlarging displacement.

REMARKS

Claims 1-3, 13-15, 17, 18, 57-65 and 67-93 are now presented for examination. Claims 1-3, 13-15, 17, 18 and 86-93 have been amended to define still more clearly what Applicant regards as his invention, in terms which distinguish over the art of record. Claims 1-3, 13-15, 17, 18, 91 and 92 are the only independent claims.

Claims 1 to 3, 13 to 15, 17, 18, 57 to 65 and 67 to 93 have been rejected under 35 U.S.C. § 112, second paragraph, as indefinite. These claims have been objected to in that it is not understood how electrodes can be formed by a polarization process. As